

THE FLORA OF NALLAMALAIS ON THE EASTERN GHATS OF INDIA—I: A PRELIMINARY LIST

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ABSTRACT

The hills of Nallamalais form a part of the Eastern Ghats in Andhra Pradesh, situated in between $15^{\circ}20'-16^{\circ}30'N$ and $78^{\circ}30'-80^{\circ}10'E$. From the Palnad basin in the north to the Tirupati hills in the south the Nallamalais run a distance of 430 km with an average width of 30 km. Five botanical tours were conducted in these regions during the period from 1963 to 1965. Out of 977 numbers collected, 908 numbers ranging over 596 taxa have been confirmed. Two new taxa have been discovered in these regions. The specimens have been deposited in the Herbarium of the Southern Circle, Botanical Survey of India, Coimbatore (MH).

INTRODUCTION

The Nallamalais form a series of parallel ranges of hills and valleys in Andhra Pradesh, situated in between $15^{\circ}20'-16^{\circ}30'N$ and $78^{\circ}30'-80^{\circ}10'E$. They occupy one-third of Kurnool District towards the eastern portion, and their ranges stretch across portions of Mahboobnagar District on the north-west, Guntur District on the north-east, Cuddapah District on the south and Nellore District on the east (Map). These hills form a part of the Eastern Ghats which run parallel to the Coromandel coast. From the Palnad basin in the north to the Tirupati hills in the south the Nallamalais run a distance of 430 km with an average width of 30 km (*The Gazetteer of India—Indian Union*, 1965). The altitude ranges from 200 to 950 m.

Botanically the Nallamalais have received little attention, and some stray collections from these areas are recorded in J. S. Gamble's "*Flora of the Presidency of Madras*". From a perusal of herbarium sheets kept in the Herbarium of the Southern Circle, Botanical Survey of India at Coimbatore, C. A. Barber, R. H. Beddome, K. Cherian Jacob, J. S. Gamble, K. Rangachari and a few others seem to have made random collections in these regions. Five botanical tours have been conducted in these regions during the years from 1963 to 1965, covering all the seasons of a year. Out of 977 numbers collected, 908 numbers ranging over 596 taxa have been confirmed.

All the specimens after identification have been deposited in the Herbarium of the Southern Circle, Botanical Survey of India, Coimbatore (MH).

PHYSIOGRAPHY

The Nallamalais form an unbroken, rugged and

of moderately steep group of hills situated in north-south direction. These hills are cut across by two passes, viz., Mantralakanama and Nandikanama, which connect the eastern and the western parts of Nallamalais. The Krishna river marks the northern boundary, though a portion of Nallamalais goes beyond the river in the Mahboobnagar District. The Gundlabrahmeswaram plateau is situated in the centre of Nallamalais. A series of folds from the main ridge run in a westerly direction descending into the plains of Atmakaur, Nandyal and Velgode. Another series of folds run in a north-easterly direction descending into the extensive plateaus of Morricheruvu and Guttalachenu, and towards east the folds end in the Cumbum valley. The southern escarpments of the Gundlabrahmeswaram plateau and the steep range of hills on the east form the backbone of the Nallamalais enclosing the Chelama basin. The Chelama basin falls into the plains of Nandyal on the west and gives rise to the folds of steep hills on the south in Sirvel range. Thus there are western and eastern folds in Nallamalais popularly known as Western and Eastern Nallamalais. The highest point in the Nallamalais is Virannakonda (1000 m) and it is situated in the Eastern Nallamalais.

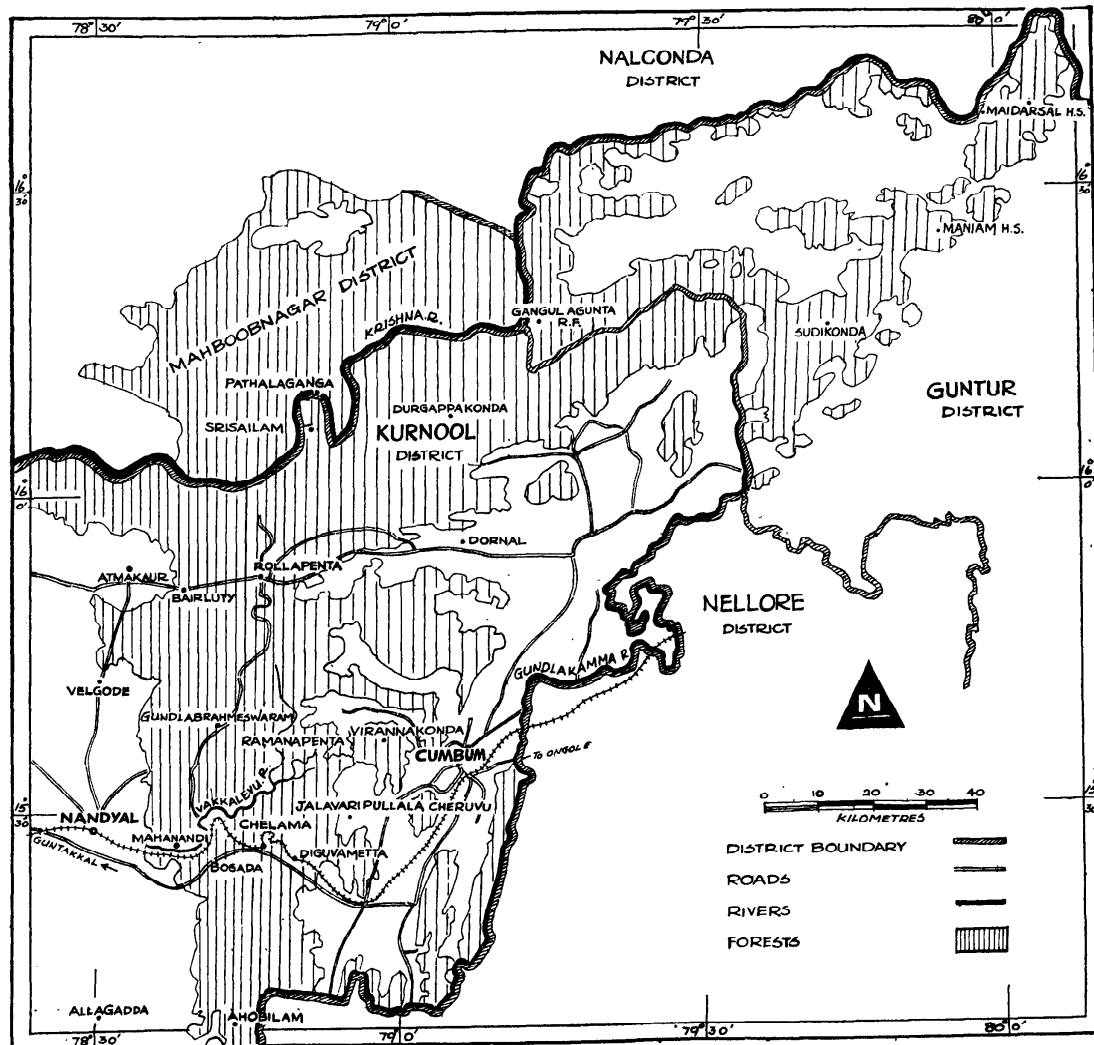
The Krishna river has entrenched its course about 300 metres below the plateau of Sivapuram, and meanders through the plateau of Srisailam where the famous temple is situated. Descending from this temple one finds the sacred pool of Pathalaganga. Near Chelama the Vakkalevu river takes its origin and flows south through Nandyal and Sirvel ranges and then enters the Cuddapah District. The Gundlakamma river takes its origin near Gundlabrahmeswaram and flows east. Other

rivers of fair importance are the Paleru river near Mahanandi and Bavanasi river near Ahobilam. In addition to these, there are several seasonal streams in these hills.

The Nallamalais are still pestered with unhealthiness mainly due to malaria and to a small measure, black-water fever (S. A. Reddy, 1967).

ROCK AND SOIL

The rocks fall into two distinctly recognizable formations, viz., the Cuddapah and the Kurnool formations of the Archean age. Sandstones in mixtures of quartzites, shales and outcrops of barytes and manganese ores occur. The lower beds are formed by highly folded Bairenkonda



Map of Nallamalais

quartzites, the succeeding Cumbum shales forming the cores of synclinal folds. The Srisailam quartzites in the north forms a rugged plateau (Krishnan, 1956). There are three types of soil: red, mixed varieties and black. The red and mixed varieties occur along the bases of Nallamalais. Towards the interior of the forests, the

soil is red with calcareous shales. The humus content is almost negligible. The black soil occurs in plains where cultivation is practised.

CLIMATE

Extremes of climate are encountered in the Kurnool District, but in the interiors of the forests

these extremes are not perceptible. On the whole, weather is rather dry. The hot period is from March to May when temperature reaches even 38°C. South-west Monsoon early in June brings down temperature considerably till about the middle of September. After a pause the north-east Monsoon becomes active. Cold weather prevails from the end of November till about the middle of February when night temperature falls as low as 15°C in the plateau of Gundlabrahmeswaram. The weather is clear during the period from February to April when wind blows from south-west. It is interesting to note that the rainfall due to the activities of both the monsoons is heavier on the western side of Nallamalais than anywhere else. The full impact of the rainfall is on Gundlabrahmeswaram which receives about 127 cm of rainfall. The average rainfall for whole of Nallamalais is about 102 cm.

VEGETATION

Forest fires and human interference in some portion of Nallamalais seem to have affected the vegetation considerably. Forest fires in hot seasons are encouraged to a certain extent for the good growth of fodder grasses which abound in these regions. The semi-nomadic tribal people called *Chenchus* have slightly affected the vegetation by their living in small groups called *Gudems*. The vegetation of Nallamalais comprises the following types: scrub, dry deciduous and moist deciduous. Apparently there are signs of forest becoming degraded from moist deciduous to deciduous and then to scrub. This is indicated in Krishnanandi where remnant of a semi-evergreen or evergreen type of forest in the centuries past is still present as a small patch.

Scrub: This type of vegetation is mostly confined to the bases of hills of Nallamalais and bordering village lands, though it can also be seen near Srisailam, in the opened out forests of Chelama, round about Mahanandi, near Lower Ahobilam, some portions of Velgode and Bairlutu, around small hills near Dornal, and in several other places.

The following plants are some of the dominants of this type of vegetation: *Acacia chundra*, *Acalypha alnifolia*, *Allmania nodiflora* R. Br. var. *aspera*, *Balanites roxburghii*, *Barleria longiflora*, *Calycopteris floribunda*, *Capparis zeylanica*, *Dichrostachys cinerea*, *Dipteracanthus patulus*, *D. prostrata*, *Grewia flavescens*, *G. obtusa*, *Hibiscus micrantha*,

Kirganelia reticulata, *Peristrophe bicalyculata*, *Solanum surattense*, *Xeromphis spinosa*, *Zizyphus mauritiana*, *Z. xylopyra*, and others.

Dry Deciduous: This type of vegetation occurs very commonly throughout Nallamalais. These forests have received protection from indiscriminate felling and other causes, and are seen in Ahobilam, Chelama basin, portion of forests on way to Gundlabrahmeswaram from Diguvametta, Velgode and other places, Diguvametta, many parts of Srisailam, etc. The trees seldom attain a height of more than 40 metres and a girth of 76 cm. Some of the common plants of these forests are: *Alangium salvifolium*, *Careya arborea*, *Chloroxylon swietenia*, *Cleistanthus collinus*, *Cordia obliqua*, *Dioscorea pentaphylla*, *D. tomentosa*, *Dolichandrone arcuata*, *D. falcata*, *Drypetes sepiaria*, clumps of *Dendrocalamus strictus*, *Emblia fischeri*, *E. officinalis*, *Ficus hispida*, *Gardenia gummiifera*, *G. resinifera*, *Grewia tiliaefolia*, *Gyrocarpus jacquini*, *Hardwickia binata*, *Ixora arborea*, *Lagerstroemia parviflora*, *Leea edgeworthii*, *Lepisanthes tetraphylla*, *Maerua apetala*, *Mallotus philippinensis*, *Manilkara hexandra*, *Marsdenia tenacissima*, *Maytenus senegalensis*, *Mucuna prurita*, *Opilia amentacea*, *Premna tomentosa*, *Pterocarpus marsupium*, *Randia candolleana*, *Tectona grandis*, *Terminalia arjuna*, *T. bellirica*, *T. chebula*, *T. coriacea*, and others.

Moist Deciduous: This type of vegetation has restricted occurrence in Nallamalais, and its presence is more conspicuously seen in (i) Gundlabrahmeswaram which is the 'heart' of Nallamalais, (ii) Rollapenta—one of the passes connecting Atmakaur and Bairlutu with Dornal, (iii) region between Upper Ahobilam and Lower Ahobilam, (iv) Iskagudem, Morricheruvu and Guttalachenu plateaus of Eastern Nallamalais. These regions are well sheltered and retention of water in the soil is by the fallen leaves and clayey type of soil. Furthermore, there are many seasonal rivers which feed them. Some of the dominant species of these regions are: *Bauhinia vahlii*, *Entada pursaetha*—two of the giant climbers which are conspicuously absent in other parts of Nallamalais, *Cleistanthus patulus*, *Colebrookea oppositifolia*, *Cestus speciosus*, *Dillenia pentagyna*, *Dioscorea hispida*, *D. wallichii*, *Gelonium lanceolatum*, *Lobelia heyneana*, *Mangifera indica*, *Meyenia hawtayneana*, *Pimpinella monoica*, *Piper attenuatum*, *P. hymenophyllum*, *P. nigrum*, *Protium serratum*, *Pueraria tuberosa*—another

liana, *Schrebera swietenoides*, *Stereospermum suaveolens*, *Syzygium alternifolium*, *Tacca pinnatifida*, *Tectona grandis*, *Sonerila tenerum*, and others. Some plants of interest which have been collected here are: *Biophytum reinwardtii*, *Geodorum densiflorum*, *Globba bulbifera*, *Rotala mexicana* Cham. et Sch. subsp. *pusilla*, and three taxa of *Oryza*, viz., *O. meyeriana* (Zoll. et Mor. ex Steud.) Baill. subsp. *granulata* which occurs abundantly under the shades at several localities in Gundlabrahmeswaram, *O. officinalis* Wall. ex Watt. subsp. *malampuzhaensis* along the Gundlakamma stream, and *Oryza* sp. along the bridge paths near Gundlabrahmeswaram. *Phoenix* sp. forms a pure stand on some of the hillocks between Gundlabrahmeswaram and Ramana-penta. Among ferns mention may be made of *Adiantum caudatum*, *A. lunulatum*, *Athyrium hohenackerianum*, *Leptochilus decurrens*, *Lygodium flexuosum*, *Tectaria macrodonta*, etc.

The grasses are abundant throughout Nallamalais soon after the monsoons in September. Most of the unmetalled roads become almost impenetrable due to the abundance of these. Some of the examples of these grasses are: *Amphilophis glabra*, *Arundinella setosa*, *Capillipedium huegelii*, *Chionachne koenigii*, *Digitaria adscendens*, *D. tomentosa*, several taxa of *Eragrostis*, *Heteropogon contortus*, *Pogonatherum panicum*, *Setima nervosum*, *Sporobolus wallichii*, *S. tenuissimus*, and others. *Saccharum spontaneum* occurs in places where streams flow. *Dendrocalamus strictus* is the commoner of the bamboos. Among sedges the following plants may be mentioned: *Cyperus castaneus*, *C. compressus*, *C. eleusinoides*, *Fimbristylis dichotoma*, *Mariscus compactus*, *M. cyperinus*, and others.

Near Krishnanandi where a small patch of semi-evergreen type of forest is present the following plants have been collected: *Calamus rotang*, *Ichnocarpus frutescens*, *Mariscus compactus*, and others. It is interesting to note that *Lantanas* do not occur in these ranges of Nallamalais.

ENUMERATION

In the following enumeration the system of Bentham and Hooker, with some delimitations of families according to Hutchinson (1960), is followed. The names of plants are arranged in an alphabetical order under each family. Nomenclature has been, as far as possible, brought upto date. All the field numbers given after the name of a taxon are of *Ellis*.

SELAGINELLACEAE

Selaginella barbata Spring 16943, 22229.

OPHIOGLOSSACEAE

Ophioglossum reticulatum Linn. 16950.

MARSILEACEAE

Marsilea quadrifolia Linn. 16858.

PARKERIACEAE

Ceratopteris siliquosa (Linn.) Copel. 16850.

SCHIZAEACEAE

Lygodium flexuosum (Linn.) Sw. 16932.

POLYPODIACEAE (*sensu lato*)

Actinopteris dichotoma (Forsk.) Kuhn 22058.

Adiantum caudatum Linn. 16759, 25535.

A. lunulatum Burm. f. 16935.

Athyrium hohenackerianum (O. Ktze.) T. Moore 16947, 22206.

Cheilanthes farinosa (Forsk.) Kaulf. 16942, 22219.

C. tenuifolia (Burm. f.) Sw. 22199.

Leptochilus decurrens Bl. 23833.

Nephrolepis cordifolia (Linn.) Presl 22207.

Tectaria macrodonta (Feé) C. Chr. 22204.

DILLENIACEAE

Dillenia pentagyna Roxb. 23815.

ANNONACEAE

Annona squamosa Linn. 16846.

Polyalthia cerasoides (Roxb.) Bedd. 16730, 16879, 25470.

MENISPERMACEAE

Cissampelos pareira Linn. 16888, 22178, 25414.

Cocculus hirsutus (Linn.) Diels 17994, 23714.

Tiliacora acuminata (Lamk.) Miers 16883.

Tinospora cordifolia (Willd.) Miers 23740.

NYMPHAEACEAE

Nymphaea nouchali Burm. f. 16857.

CAPPARACEAE

Capparis sepiaria Linn. 16732, 25453, 25508.

C. stylosa DC. 23745, 25544.

C. zeylanica Linn. 16897, 23710.

Cleome aspera Koenig 16873, 22121.

C. monophylla Linn. 16924.

C. viscosa Linn. 16817, 25490.

Gynandropsis gynandra (Linn.) Briq. 16784.

Maerua apetala (Roth) Jacobs 23751.

M. arenaria Hook. f. & Thw. 23721.

VIOLACEAE

Hybanthus enneaspermus (Linn.) F. V. Muell. 16752, 16758, 25402.

BIXACEAE

- Cochlospermum religiosum* (Linn.) Alston 23718.
Flacourtia indica (Burm. f.) Merr. 23777.

POLYGALACEAE

- Polygala chinensis* Linn. 16813.
P. elongata Klein 22138, 25403.
P. erioptera DC. var. *vahlana* (DC.) Chodat. 18062.

GARYOPHYLLACEAE

- Polycarpaea corymbosa* (Linn.) Lamk. 22085.

PORTULACACEAE

- Portulaca suffruticosa* Wt. 16861.

MALVACEAE

- Abelmoschus moschatus* Medicus 22228.
Abutilon indicum (Linn.) Sweet 17989.
Azanza lampas (Cav.) Alef. 18001, 22040, 25497.
Hibiscus lobatus (J. A. Murray) O. Ktze. 22162, 25570.
H. lunariifolius Willd. 22149.
H. micranthus Linn. f. 16829, 25522.
H. vitifolius Linn. 25520.
Kydia calycina Roxb. 22221.
Pavonia odorata Willd. 16795, 22094, 25521.
Sida acuta Burm. f. 16812.
S. cordifolia Linn. 22117.
S. rhombifolia Linn. 17965.
Urena lobata Linn. subsp. *sinuata* (Linn.) Borss.
 var. *sinuata* 17990, 22062.

STERCULIACEAE

- Byettneria herbacea* Roxb. 16767, 17998, 25472.
Eriolaena lushingtonii Dunn 16715.
Firmiana colorata (Roxb.) R. Br. 23821.
Helicteres isora Linn. 16876, 17940, 22197.
Melochia corchorifolia Linn. 18052, 22078.
Pterospermum xylocarpum (Gaertn.) Sant. & Wagh
 22147, 23781.
Sterculia urens Roxb. 23726.
Waltheria indica Linn. 16811.

TILIACEAE

- Corchorus aestuans* Linn. 17987, 22038.
C. fascicularis Lamk. 18007.
C. olitorius Linn. 22047.
Grewia flavescens Juss. 16847, 22152.
G. hirsuta Vahl 16814, 25406.
G. obtusa Wall. 16823.
G. rhamnifolia Heyne 22103.
G. rothii DC. 16712, 22035, 22122.
G. rotundifolia Juss. 23725.
G. tiliaefolia Vahl 22106, 23742, 25432.
Triumfetta pentandra A. Rich. 22081.
T. rhomboidea Jacq. 17986.

LINACEAE

- Erythroxylon monogynum* Roxb. 16822, 22087, 25409.

GERANIACEAE

- Biophytum reinwardtii* (Zucc.) Edgw. & Hook. f.
 25564.
B. sensitivum (Linn.) DC. 22016.
Oxalis corniculatum Linn. 16927.

RUTACEAE

- Aegle marmelos* Correa 18025.
Atalantia monophylla Correa 16830.
Chloroxylon swietenia DC. 23705.
Feronia limonia (Linn.) Swingle 23704, 25512.
Hesperethusa crenulata (Roxb.) Roem. 25439.
Pleiospermium alatum (Wt. & Arn.) Swingle 23770.

SIMARUBACEAE

- Ailanthus excelsa* Roxb. 23749.
Balanites roxburghii Planch. 16745.

BURSERACEAE

- Boswellia serrata* Roxb. ex Colebr. 23731.
Commiphora caudata Engl. 16824, 22100, 23752.
Protium serratum Engl. 23849.

MELIACEAE

- Azadirachta indica* A. Juss. 16872, 23738.

OLACACEAE

- Olex scandens* Roxb. 25426.
Ximenia americana Linn. 16776, 23746.

OPILIACEAE

- Opilia amentacea* Roxb. 16735, 23744.

CELASTRACEAE

- Celastrus paniculata* Willd. 16951, 23816, 25419.
Maytenus senegalensis (Lamk.) Exell 18047.

RHAMNACEAE

- Ventilago denticulata* Willd. 22052.
V. maderaspatana Gaertn. 23776.
Zizyphus mauritiana Lamk. 18051, 22067.
Z. oenoplia Mill. 16796, 18054, 25405.
Z. rugosa Lamk. 23809.
Z. xylopyra (Retz.) Willd. 16703, 22218, 23713.

VITACEAE

- Ampelocissus latifolia* (Roxb.) Planch. 16736, 25425.
A. tomentosa (Heyne) Planch. 16740, 18031, 22021, 25447.
Cayratia carnosa Gagnep. 16773, 22022, 25591.
C. pedata (Lamk.) Juss. ex Gagnep. 16853, 25421.
Cissus pallida (Wt. & Arn.) Planch. 16713, 22018, 25473.
C. vitiginea Linn. 16769, 22107, 25477.
Leea edgeworthii Sant. 16904, 25578.

SAPINDACEAE

- Allophylus serratus* (Roxb.) Radlk. 22102.
Cardiospermum halicacabum Linn. 16794, 25592.
Lepisanthes tetraphylla (Vahl) Radlk. 23769, 23790.
Sapindus emarginatus Vahl 22145.
Schleichera oleosa (Lour.) Oken 23728.

ANACARDIACEAE

- Lannea coromandelica* (Houtt.) Merr. 23703, 23716.
Mangifera indica Linn. 23840.
Semecarpus anacardium Linn. f. 16930, 16937, 18046.

MORINGACEAE

- Moringa concanensis* Nimmo 23756.

PAPILIONACEAE

- Abrus precatorius* Linn. 25434.
Aeschynomene indica Linn. 25583.
Alysicarpus rugosus DC. var. *pilifer* Prain 18060.
A. vaginalis (Linn.) DC. 18061.
A. vaginalis (Linn.) DC. var. *heterophyllus* Baker 22014, 22075.
Atylosia scarabaeoides Benth. 22032, 23717.
A. volubilis Gamble 23814.
Canavalia gladiata (Jacq.) DC. 16880, 18065, 22151.
Codariocalyx motorius (Houtt.) Ohasi 22223.
Crotalaria medicaginea Lamk. 18024, 22012, 22092.
C. mysorensis Roth 18023, 22054.
C. prostrata Roxb. 17951.
C. pusilla Heyne 22125.
Cyllista scariosa Roxb. 23831.
Dalbergia lanceolaria Linn. f. 22089, 25441.
D. latifolia Roxb. 18045, 25464.
D. paniculata Roxb. 16775, 16820.
D. volubilis Roxb. 23813.
Derris scandens (Roxb.) Benth. 18053, 25433, 25452.
Desmodium gangeticum (Linn.) DC. 17955, 23844, 25418.
D. heterocarpon (Linn.) DC. 22135.
D. latifolium DC. 18032, 22028.
D. laxiflorum DC. 22135.
D. pulchellum (Linn.) Benth. 17995, 22034.
D. triflorum (Linn.) DC. 22176.
D. triquetrum DC. 22224.
Eleiotis monophylla (Burm. f.) O. Ktze. 17953, 22007.
Erythrina stricta Roxb. 23850.
Hardwickia binata Roxb. 25513.
Indigofera cordifolia Heyne 16765, 18059.
I. glabra Linn. 22091.
I. hirsuta Linn. 22033, 25572.
I. linifolia Retz. 17957, 22011.
I. linnaei Ali 16808.

- I. mysorensis* Rottl. 16868.
I. prostrata Willd. 22123, 22225.
I. pulchella Roxb. 17945, 23807.
I. tinctoria Linn. 22118.
I. trita Linn. f. 17964, 22060.
Moghania ferruginea (Wall. ex Benth.) Li 23843.
M. strobilifera (Linn.) J. St. Hill ex Jacks. 23802.
Mucuna hirsuta Wt. & Arn. 18066.
M. prurita Hook. 17958.
Mundulea suberosa Benth. 16819.
Phaseolus aconitifolius Jacq. 18069, 22074.
P. radiatus Linn. 17948.
Pongamia pinnata (Linn.) Pierre 23826, 25577.
Pterocarpus marsupium Roxb. 16881, 18027, 25543.
Pueraria tuberosa DC. 23805.
Rhynchosia aurea DC. 22069.
R. minima DC. var. *laxiflora* Baker 22008.
R. rufescens DC. 17947, 22146.
R. viscosa DC. 16755, 18037, 23712.
Tephrosia hamiltonii Drumm. 22013.
T. hirta Buch.-Ham. 22029.
T. procumbens Buch.-Ham. 18056.
T. purpurea (Linn.) Pers. 17950, 23766, 25516.
Uraria picta Desv. 16785, 22023, 25413.
Zornia gibbosa Span. 22004.

CAESALPINIACEAE

- Bauhinia racemosa* Lamk. 16716.
B. tomentosa Linn. 16865, 25582.
B. vahlii Wt. & Arn. 16954, 23811, 25573.
Cassia absus Linn. 18035, 22006.
C. auriculata Linn. 22076, 25594.
C. fistula Linn. 16898, 18000.
C. occidentalis Linn. 25523.
C. pumila Lamk. 22073, 25587.
C. tora Linn. 22030.
Piliostigma malabaricum (Roxb.) Benth. 22037.
Pterolobium hexapetalum (Roth) Sant. & Wagh 16731, 25469.

MIMOSACEAE

- Acacia chundra* (Roxb.) Willd. 16720, 18002, 25422.
A. pennata (Roxb.) Willd. 16744, 17992, 25596.
Albizia lebbeck (Linn. f.) Benth. 18067, 22101, 23719.
A. odoratissima Benth. 22051.
Dichrostachys cinerea (Linn.) Wt. & Arn. 16828, 25534.
Entada pursaetha DC. 16955, 23794.
Mimosa intsia Linn. 25416.
M. polyancistra Benth. 16723, 22068.
Parkia biglandulosa Wt. & Arn. 23793.

COMBRETACEAE

- Anogeissus latifolia* (Roxb. ex DC.) Bedd. 17980, 22096, 25542.
Calycopteris floribunda (Roxb.) Lamk. 23782.
Combretum ovalifolium Roxb. 23741.
Terminalia arjuna (Roxb. ex DC.) Wt. & Arn. 16837.
T. bellirica (Gaertn.) Roxb. 16843, 23768, 25503.
T. chebula Retz. 16899, 22140.
T. coriacea Wt. & Arn. 16763, 18040, 25525.

LECYTHIDACEAE

- Barringtonia acutangula* Gaertn. 16838, 22109.
Careya arborea Roxb. 23804.

MYRTACEAE

- Syzygium alternifolium* (Wt.) Walp. 23847.

MELASTOMATACEAE

- Memecylon umbellatum* Burm. f. 16866.
Osbeckia zeylanica Willd. 23774.
Sonerila tenera Royle 22220.

LYTHRACEAE

- Ammannia baccifera* Linn. 17973.
Lagerstroemia parviflora Roxb. 16738, 16762, 25423.
Rotala mexicana Cham. & Sch. subsp. *pusilla* (Tul.) Koehne 22196.
Woodfordia fruticosa Kurz 23824.

ONAGRACEAE

- Ludwigia octovalvis* (Jacq.) Raven subsp. *sessiliflora* (Mich.) Raven 16834.
L. perennis Linn. 22080.

PASSIFLORACEAE

- Passiflora foetida* Linn. 16854, 25498.

CUCURBITACEAE

- Coccinia grandis* (Linn.) Voigt 16780, 16921.
Cucumis callosus (Rottl.) Cogn. 16803.
Diplocyclos palmatus (Linn.) Jeffrey 22026.
Luffa acutangula Roxb. 18079.
Solena heterophylla Lour. 16934, 22015, 22187, 23836, 25457.
Momordica charantia Linn. 25517.
M. dioica Roxb. 25454, 25465.
Mukia maderaspatana (Linn.) Roem. 18049.
M. scabrella Arn. 22099.
Trichosanthes bracteata (Lamk.) Voigt 16910, 16956.

MOLLUGINACEAE

- Gliaus lotoides* Linn. 16806, 23767.
G. oppositifolius (Linn.) DC. 16728, 25518.
Mollugo pentaphylla Linn. 16815, 22111, 25491.

UMBELLIFERAE

- Centella asiatica* (Linn.) Urban 23801.
Pimpinella monoica Dalz. 22200.

ARALIACEAE

- Schefflera stellata* Harms 16890.

ALANGIACEAE

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REFERENCES

- ALI, S. I. The identity of *Mimosa intsia* Linn. *Taxon* 16 : 237-238, 1967.
 ANONYMOUS. *The Gazetteer of India—Indian Union*. Vol. 1. *Country and People*. Publications Division, Govt. of India, 1965.
 BOR, N. L. *The grasses of Burma, Ceylon, India and Pakistan (Excluding Bambuseae)*. Oxford, 1960.
 ELLIS, J. L. *Euphorbia linearifolia* Roth var. *nallamalayana* Ellis—A new variety from Andhra Pradesh, South India. *Bull. bot. Surv. India* 8: 345-346, 1966.
 ———. *Andrographis nallamalayana* Ellis—A new species from Andhra Pradesh, South India. *Ibid.* 8: 362-363, 1966.
 GAMBLE, J. S. *Flora of the Presidency of Madras*. Rep. ed. Calcutta, 1957.
 HUTCHINSON, J. *The Families of Flowering Plants*. Vol. 1. Dicotyledons. 2nd rep. ed. Oxford, 1960.
 KRISHNAN, M. S. *Geology of India and Burma*. Madras, 1956.
 MAHESWARI, J. K. *The Flora of Delhi*. New Delhi, 1963.
 MOHD. SHARFUDDIN KHAN. *Forest Flora of Hyderabad State*. Hyderabad, 1953.
 OHASHI, HIROYOSHI. Notes on some species of *Desmodium* and *Codariocalyx* from Himalaya (1). *J. Jap. Bot.* 40 : 363-369, 1965.
 REDDY, S. A. *Revised working plan for the forests of Kurnool East Division 1956-57 to 1970-71*. Secunderabad, 1957.
 SANTAPAU, H. The Flora of Khandala on the Western Ghats of India. *Rec. bot. Surv. India* 16 (1): pp. i-xxv., 1-372, 3rd. revised ed., 1967.
 SUBBA RAO T. V. *Forest types of Andhra Pradesh, their ecology with special reference to climatic, soil and other factors, etc.* Unpublished thesis submitted to Indian Forest College, Dehra Dun, 1960.
 TATEOKA, T. Taxonomic studies of *Oryza* III. Key to the species and their enumeration. *Bot. Mag. Tokyo* 76: 165-173, 1963.